

From Brazil To Fermilab



Moacyr Souza, Henrique Oliveira, Carlos Escobar, Alberto Santoro, Sérgio Zimmermann (from left) and João dos Anjos were the first Brazilians to arrive at Fermilab in 1984.

Particle physics has played a very important role in the development of Brazilian science. Already in the 1930's, physicists Wathagin, Pompeia and Damy de Souza Santos carried out some pioneering work at the University of São Paulo. They identified characteristic features of cosmic rays created by particles entering the earth's atmosphere.

In 1947, Lattes and Occhialini took part in Powell's Nobel Prize winning experiments in the Bolivian Andes, where they used photographic plates to study the processes leading to the production of secondary particles in cosmic rays. They discovered the pion, an unstable particle that is seven times lighter than a proton. Today we know that the pion is Nature's lightest quark-antiquark combination.

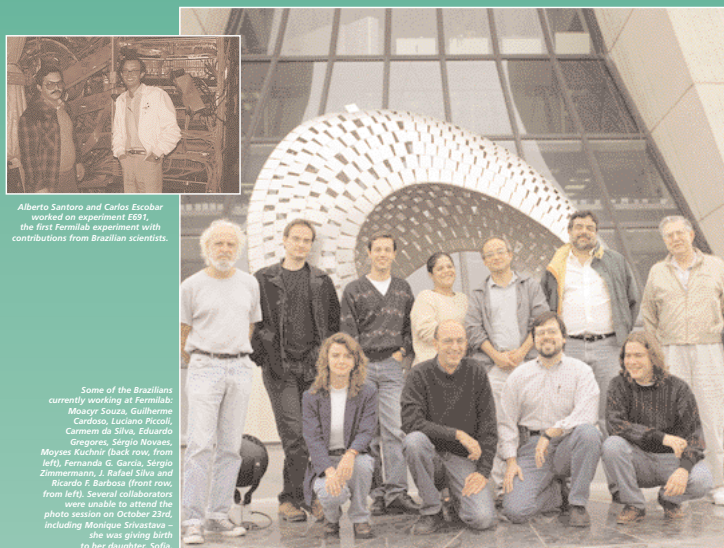
Cesar Lattes returned to Brazil and, in 1949, founded the Centro Brasileiro de Pesquisas Físicas (CBPF), a research center devoted to both experimental and theoretical physics. He continued his research in particle physics at the Chacaltaya peak in Bolivia, using nuclear emulsions to record and analyze tracks of cosmic particles.

In 1983, Brazilian physicists organized a conference to discuss the possibility of joining international research collaborations that worked on the best particle experiments at the high-energy frontier. Former Fermilab Director Leon Lederman, who attended the conference, offered his support and helped to establish a Brazilian participation at Fermilab. Soon the first Brazilians, five physicists and one engineer, traveled to Fermilab.



Alberto Santoro, Gilvan Alves, Hilda da Motta Filho and André Szajder are some of the Brazilians members of the 500-scientist DZero collaboration.

Since then Brazilians have joined and carried out a variety of experiments using both colliding beams and fixed-target setups. They are involved in data analysis, software and hardware development, detector design and production of detector components. Graduate students receive training both at their home universities and at Fermilab, seizing the opportunity to get involved in experimental high-energy physics.



Alberto Santoro and Carlos Escobar worked on experiment E597, the first Fermilab experiment with contributions from Brazilian scientists.

Some of the Brazilians currently working at Fermilab: Moacyr Souza, Guilherme Cardoso, Luciano Piccoli, Carmen da Silva, Eduardo Gregores, Sérgio Novais, Moyses Kuchler (back row, from left), Fernanda G. Garcia, Sérgio Zimmermann, J. Rafael Silva and Ricardo F. Barbosa (front row, from left). Several collaborators were unable to attend the photo session on October 23rd, including Monique Srivastava - she was giving birth to her daughter, Sofia.